STATE OF SOUTH CAROLINA
BEFORE THE PUBLIC SERVICE COMMISSION
DOCKET NOS. 2017-8-E & 2017-10-E

In the Matter of:	)	
	)	COMMENTS OF SOUTH CAROLINA
Duke Energy Carolinas, LLC and	)	COASTAL CONSERVATION
Duke Energy Progress, LLC	)	LEAGUE AND SOUTHERN
Integrated Resource Plans	)	ALLIANCE FOR CLEAN ENERGY
	)	

I. Background

South Carolina is currently facing a generational failure of energy resource planning, utility execution, and regulatory oversight. Two large nuclear units have been abandoned after utilities spent approximately $9 billion towards their construction. While overshadowed by the V.C. Summer abandonment, Duke Energy has also cancelled its plans at the Lee nuclear project after spending over $500 million.[1] These disastrous outcomes demand that South Carolina, going forward, redouble its efforts at sound energy planning, including vigorous regulatory oversight, to ensure that reasonable alternatives are properly evaluated and that resource planning choices minimize costs and risks for customers. Utility integrated resource plans ("IRPs") are a key component of sound planning. In light of recent failures resulting from poor planning and inadequate oversight, utility IRPs in South Carolina, and the Commission proceedings surrounding them, must be reevaluated and reinvigorated.

Existing efforts to implement the State Energy Plan cannot substitute for active oversight of the utilities' IRPs by this Commission. The South Carolina Energy Office launched its State Energy Plan initiative in early 2016, and earlier this year convened an IRP study committee, in which petitioners have actively engaged. That committee has met numerous times and explored the current state of IRP in South Carolina, past IRP rules and processes, examples from other states, and best practices for developing IRPs, with final committee work products pending. The Committee's deliberations and their possible outcomes are no substitute for a careful and searching review of the utilities' IRPs on the part of the Commission. In fact, the opposite is true; the Commission's expert review would contribute to the development of the State Energy Plan study.

Petitioners have filed comments on the Duke Energy Carolinas, LLC ("DEC") and Duke Energy Progress, LLC ("DEP") IRPs each year since 2011. In that time, the Commission has declined to engage substantively in this important process to ensure that IRPs "minimiz[e] the long run total costs of the utility's overall system and produce[] the least cost to the consumer consistent with the availability of an adequate and reliable supply of electricity while

[1] http://www.greenvilleonline.com/story/news/environment/2017/08/28/duke-energy-scraps-planned-lee-nuclear-station-gaffney/607723001/.

maintaining system flexibility and considering environmental impacts." Commission Order No. 91-1002. In the comments that follow, Petitioners offer an overview of several issues of importance from the DEC and DEP 2017 IRPs. We ask that the Commission review the 2017 DEC and DEP IRPs, require the companies to consider and address these comments, and order the companies to adhere to best practice planning moving forward.

II. 2017 DEC and DEP IRPs

A. Resource Portfolio Deficiencies

Both the DEC and the DEP 2017 IRP show that the companies plan to concentrate ratepayer money on new natural gas-fired generation over the next 15 years. Natural gas generation is by far the largest category of resource additions over the planning horizon for both companies, at 45% on a capacity basis for DEC and 72% on a capacity basis for DEP. DEC 2017 IRP at 10; DEP 2017 IRP at 10. Greater dependence on gas-fired resources to meet demand means enhanced risk for customers, who will see rate increases if gas prices spike, if there is a general upward trend in gas prices, if constraints are placed on hydraulic fracturing recovery, and/or if CO_2 regulations or pricing are imposed. Each of these possible outcomes would increase specific costs for which ratepayers (through fuel recovery charges) bear most of the risk. **Given the V.C. Summer and Lee Nuclear project disasters—which have cost South Carolinians billions of dollars—failure of this Commission to require a full and transparent evaluation of the risks of a gas-dependent portfolio and all avenues to reduce that risk would invite another costly gamble using ratepayer money.**

Both the DEC and DEP 2017 IRPs fail to explore alternative resource portfolios that reduce risk through greater emphasis on energy efficiency programs and/or renewable resources. At 2-3 cents per kWh saved,[2] energy efficiency programs in South Carolina cost just a fraction of what the most competitive supply-side resources cost. A high energy efficiency resource portfolio could delay or avoid one or more of the gas-fired or nuclear additions to the resource plan, potentially saving ratepayers billions of dollars. Yet Duke did not consider a high energy efficiency portfolio in the 2017 IRPs. Likewise, a high renewables portfolio could diversify the companies' new additions away from such a heavy reliance on natural gas. While a large amount of solar capacity is expected to be added as part of each utility's plan due to North Carolina HB 589, the South Carolina portion of Duke Energy's grid currently has very low solar penetration and could take on significant growth in solar photovoltaic installations. Towards the latter half of the planning horizon, offshore and potentially onshore wind made feasible with higher hub heights could also play a role in diversifying the companies' energy mix. To evaluate the cost and risk profiles of these options, DEC and DEP must model resource portfolios with elevated levels of renewables.

[2] For example, ORS reported that DEC's expected lifetime cost of energy saved for its 2017 efficiency programs is 2.5 cents per kWh. ORS, Review of DEC Application for Approval of Rider 8 at 6 (May 16, 2016), *available at* https://dms.psc.sc.gov/Attachments/Matter/db98229d-078c-40ce-9d8a-f0034fbcfbfa. Likewise, the expected lifetime cost of energy saved for DEP's 2017 efficiency programs is 1.97 cents per kWh. ORS, Review of DEP Application for Approval of Rider DSM/EE-8 at 7 (Oct. 17, 2016), *available at* https://dms.psc.sc.gov/Attachments/Matter/a271a402-f171-4b37-839d-b499220d1274.

B. Peak Assumption Deficiencies

Both utilities continue to use a winter peak assumption for planning purposes. This change from a long-time practice of planning for summer peak was initiated in the 2016 IRPs. Petitioners noted then that this change is insufficiently discussed in the 2016 IRPs and needs further review to ensure that any changes to system peak expectations are well characterized and supported, and to ensure that any such changes are consistently reflected throughout Duke's planning process. The Commission has not reviewed or approved this major change in planning assumptions.[3]

C. Load Forecast Deficiencies

Duke's 2017 IRP load forecasts have changed significantly compared to the 2016 IRPs. However, the IRPs do not explore substantial uncertainties in the load forecast. One key factor leading to the cancellation of the V.C. Summer project was much lower than expected load growth, which underscores the importance of rigorous review of utility load forecasts and testing of a reasonable range of load sensitivity cases. Uncertainty about load growth must be recognized and planned for, and generally favors more modular, flexible resource types with shorter construction lead times.

D. Resource Adequacy Study Deficiencies

Duke's 2017 IRPs continue to rely on the planning reserve margin used for the 2016 IRPs. However, the resource adequacy study underlying the increased reserve margin used in both the 2016 and 2017 IRPs depends on several questionable factors. Key assumptions that Duke has made to justify its winter peak forecast and its overall load forecast are critical inputs to the resource adequacy study. Duke's assessment of the impact of solar power on its reliability also depends on a cursory, inadequate review of solar power performance during peak load periods. During this period of rapid technological change and dramatic changes in weather patterns, Duke may need to update its resource adequacy study more frequently and place greater emphasis on exploring uncertainties in these key factors.[4]

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[3] *See also* North Carolina Utilities Commission, In the Matter of 2016 Biennial Integrated Resource Plans and Related 2016 REPS Compliance Plans, Order Accepting Integrated Resource Plans and Accepting REPS Compliance Plans, Dkt. No. E-100, Sub 147, at 11-15 ("[T]he Commission shares the concerns expressed by the Public Staff on issues related to statistical and econometric forecasting practices and by SACE that DEC's load forecast may be higher than reasonably justified. Therefore, . . . the Commission directs DEC to address this matter in its 2017 IRP update. . . . Specifically, the Commission determines that DEC should address in its 2017 IRP Update, any refinements it makes to its forecasting methodology to better address load response in general, but especially the previous extreme winter weather events. In addition, DEC should clarify in its 2017 IRP Update how the 540 MW NCEMC backstand agreement is treated in its forecast. ").

[4] *See* North Carolina Utilities Commission, In the Matter of 2016 Biennial Integrated Resource Plans and Related 2016 REPS Compliance Plans, Order Accepting Integrated Resource Plans and Accepting REPS Compliance Plans, Dkt. No. E-100, Sub 147, at 18, 21 ("[T]he Commission concludes that the reserve margins included in the utilities' IRPs are reasonable at this time for planning purposes. However, the Commission finds the analyses by the Public Staff and SACE's report by Mr. Wilson [evaluating three issues that improperly inflated reserve margins] to be helpful regarding the question of whether DEC and DEP should move to a 17% winter reserve margin target. The Commission concludes that this move is not supported by the evidence in this proceeding. Nevertheless, the

E. Positive Features and Improvements

There are some positive features in this year's Duke IRPs. First, as with previous IRPs, Duke has explored a few possible futures in which its system may operate. This analysis of different scenarios is one way to test the robustness of a resource portfolio and assess the risks associated with a given plan. In contrast to Duke, SCE&G has failed to include even this type of basic examination in its IRPs, significantly diminishing the value of its IRP process. But while Duke has included scenario analysis, the scenarios explored do not represent a reasonable range of futures and are not transparently described. For example, the 2017 IRPs explore scenarios with and without CO_2 regulations, and with and without existing nuclear unit relicensing. However, they do not explore scenarios that vary important assumptions relating to natural gas prices,[5] load growth,[6] or delays and cost overruns in the construction of large, new generation units. Second, Duke has begun considering some new resource options in an early stage of its planning process, including large-scale solar (50 MW projects) and additional solar-plus-battery options. While these resources were eliminated from consideration any alternative resource portfolios to compare against the companies' base cases, recognition that they are available is a step in the right direction.

III. Conclusions and Requests

Utility rates and bills are ultimately a function of the resource investments proposed by utilities and reviewed by regulators. Once investments are made, rates are updated to include cost recovery for those investments found to be reasonable and prudent. South Carolina families and businesses deserve a strong planning process where regulators are actively engaged with utilities and stakeholders in assessing planning assumptions, resource portfolios, and the future scenarios under which those resources are tested. That attention has been sorely lacking in South Carolina for too long. Moving forward from the V.C. Summer and Lee plant cancellations in a constructive manner will require careful probing of IRPs. To this end, Petitioners request that the Commission require Duke to adopt and implement the following planning best practices for next year's DEC and DEP IRPs:

1. Analyzing multiple resource portfolios that include, at minimum, a high demand-side management portfolio and a high renewable energy portfolio
2. Establishing a set of scenarios to analyze the robustness of each resource portfolio that includes, at minimum, a scenario with a price on carbon, a scenario with elevated natural gas prices, a scenario with lower load growth, and a scenario with delays and cost overruns in the construction of large, new generation units
    a. Analyzing each resource portfolio across all scenarios, and keep scenarios consistent for each resource portfolio

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concerns outlined by the Public Staff, as well those discussed in Mr. Wilson's report, should be acknowledged by DEC and DEP and fully addressed in their 2017 IRP updates.").

[5] DEC 2017 IRP at 29; DEP 2017 IRP at 27-28; Duke Responses to First Data Request of CCL and SACE, item no. 1-1.

[6] DEC 2017 IRP at 34-45; DEP 2017 IRP at 34-45.

3. Presenting economic and environmental outcome metrics for all portfolios across all scenarios
    a. Including air emissions, water impacts, and waste disposal quantities as environmental outcome metrics
4. Using reasonable, transparent assumptions when forecasting resource needs and costs
    a. Basing assumptions on publicly available data whenever possible
    b. Setting planning reserve margins based on explicit reliability criteria that do not result in excess capacity and excessive costs.

Respectfully submitted this 1st day of December, 2017.

s/ Elizabeth Jones
SC Bar No. 102748
Southern Environmental Law Center
463 King Street, Suite B
Charleston, SC 29403
Telephone: (843) 720-5270
Fax: (843) 414-7039
ejones@selcsc.org

Attorney for South Carolina Coastal Conservation League and Southern Alliance for Clean Energy

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I certify that the following persons have been served with a copy of the Comments of the South Carolina Coastal Conservation League and Southern Alliance for Clean Energy, by electronic mail and/or U.S. First Class Mail, at the addresses set forth below:

Heather S. Smith
Duke Energy Progress, LLC
40 West Broad, Suite 690
Greenville, SC 29601
Heather.smith@duke-energy.com

Rebecca J. Dulin
Duke Energy Progress, LLC
1201 Main Street, Suite 1180
Columbia, SC 29201
Rebecca.Dulin@duke-energy.com

Frank R. Ellerbee, III
Sowell Gray Robinson Stepp Laffitte, LLC
P.O. Box 11449
Columbia, SC 29211
fellerbe@sowellgray.com

Richard L. Whitt
Austin & Rogers, P.A.
508 Hampton Street, Suite 300
Columbia, SC 29201
rlwhitt@austinrogerspa.com

Jeffrey M. Nelson
Office of Regulatory Staff
1401 Main Street, Suite 900
Columbia, SC 29201
jnelson@regstaff.sc.gov

Timothy F. Rogers
Austin and Rogers, P.A.
Post Office Box 11716
Columbia, SC 29201
tfrogers@austinrogerspa.com

This the 1st day of December, 2017.

s/ Andrea Rachel Pruzin